

REMARKS

Upon entry of the present amendment, claims 1-4 and 7-10 will remain pending in the above-identified application and stand ready for further action on the merits.

The amendments made herein to the claims do not incorporate new matter into the application as originally filed. For example, support for the amendments may be found at page 4, lines 5-17 and page 5, line 22 to page 6, line 9 of the original filed specification. It is also noted that the examples set forth in the specification provide support for the claim amendments being made.

Claim Rejections Under 35 USC § 102/103

Claims 1-6 have been rejected under 35 USC § 102(e) as being anticipated by Uchiumi et al. (US 6,329,480 B1). Further, claim 7 has been rejected under 35 USC § 103(a) as being unpatentable over Uchiumi et al. (US '480 B1) in view of Wojtech et al. (US 5,073,622). Reconsideration and withdrawal of each of these rejections is respectfully requested based upon the following considerations.

The Present Invention and Its Advantages

The present invention relates to a process for producing a poly(meth)acrylate having a reduced metal content. More precisely,

the invention relates to a process for producing a poly(meth)acrylate having a reduced metal content, which comprises contacting a mixture of a poly(meth)acrylate and an organic solvent with an acidic aqueous solution.

As recited in the pending claims, the poly(meth)acrylate having a reduced metal content is one in which "a bound site to (meth)acrylate acid is a tertiary carbon or in which said site is an acetal". Such poly(meth)acrylates in which a bound site to (meth)acrylic acid is a tertiary carbon or in which said site is an acetal are useful as resins for resist for high-energy radiations such as far ultraviolet rays (including excimer laser and the like), electronic rays, X-rays or radiation lights. With the invention, poly(meth)acrylates having a reduced metal content can be produced without substantially having hydrolysis occur.

Distinctions Over the Cited Art

In Uchiumi et al. (US '480 B1), there is no specific disclosure of washing a poly(meth)acrylate as defined in claim 1 with an acidic aqueous solution as also defined in claim 1. That is, the invention of instant claim 1 is not specifically described in the Uchiumi et al. reference. Instead, Uchiumi et al. at best simply discloses t-butyl(meth)acrylate as a monomer of poly(meth)acrylate, and separately disclose/exemplify an aqueous

solution of citric acid. In other words, Applicants' submit that nowhere in the cited Uchiumi et al. reference is there provided a any disclosure of a specific (meth)acrylate and a specific acid as is recited in instant claim 1. As such, the cited Uchiumi et al. reference is incapable of defeating the novelty of instant claim 1 and the dependent claims that relate thereto. As such, the Examiner's rejection under 35 USC § 102(e) must be withdrawn.

Apart from the above considerations, it is noted that the present invention is also non-obvious over the cited Uchiumi et al. reference, whether considered singularly or in combination with the secondary cited reference of Wojtech et al. (US '622). Such contentions are based upon the following facts.

First, page 5, lines 5-17 of the specification teaches that poly(meth)acrylate in which a bound site to (meth)acrylic acid is a tertiary carbon or in which said site is an acetal is useful as a resin for resist for high energy radiations such as far ultraviolet rays (including excimer laser and the like), electronic rays, X-rays or radiation lights. Generally, such poly(meth)acrylates are easily hydrolyzed under acidic conditions and the alcohol residues of the poly(meth)acrylate are eliminated.

However, in the present invention, the metal content of such easily hydrolysable poly(meth)acrylates can be remarkably reduced without substantially having hydrolysis occur. This remarkable

effect of the present invention is not taught or otherwise indicated or disclosed in the cited Uchiumi et al. reference. As such, it follows that the cited Uchiumi et al. reference cannot serve as a proper foundation for rendering obvious Applicants' invention as claimed under 35 USC § 103(a), since it in no way teaches, discloses or otherwise leads those of ordinary skill in the art to arrive at the instant invention as claimed, or the advantageous results that are associated therewith.

Second, in the reference of Wojtech et al. (US '622), there is only disclosed the use of novolak resins. Novolak resins, such as those taught by Wojtech et al., possess no problem with regard to being easily hydrolysable.

Third, no indication is provided in Wojtech et al. to apply its teachings to any poly(meth)acrylate, especially one as specifically defined in claim 1. Likewise, nowhere in the cited Wojtech et al. reference is there provided any teaching or indication of the remarkable effects that can be obtained with the present invention by washing an easily hydrolysable poly(meth)acrylate with a polyprotic carboxylic acid as defined in the instant claim 1. The absence of such teachings in the secondary cited reference of Wojtech et al. clearly evidences that its combination with the primary reference of Uchiumi et al. fails to render obvious the present invention as claimed.

CONCLUSION

Based upon the amendments and remarks presented above, the Examiner is respectfully requested to issue a Notice of Allowance clearly indicating that each of the pending claims 1-4 and 7-10 are allowed and patentable under the provisions of Title 35 of the United States Code.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact John W. Bailey (Reg. No. 32,881) at the telephone number below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By 

John W. Bailey, #32,881

JWB/enm
2185-0575P

P.O. Box 747
Falls Church, VA 22040-0747
(703) 205-8000